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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/684,536      | 10/06/2000  | Kamran R. Khadavi    | DR-224 (50564)      | 1536             |

7590 11/18/2004

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EXAMINER

WAHBA, ANDREW W

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2661

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                                    |  |
|------------------------------|-------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>09/684,536 | Applicant(s)<br>KHADAVI, KAMRAN R. |  |
|                              | Examiner<br>Andrew W Wahba    | Art Unit<br>2661                   |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-24,26-35 and 37-47 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45 and 46 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,11-17,21,22,26,27,32,33,37-39,43,44 and 47 is/are rejected.
- 7) ☒ Claim(s) 8-10,18-20,23,24,29-31,34,35 and 40-42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

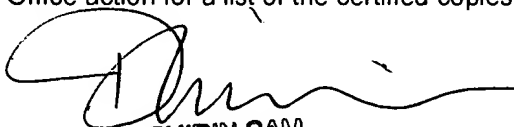
### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 06/25/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

  
**PHIRIN SAM**  
**PRIMARY EXAMINER**

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to claim 14, the applicant claims, "modeling the local loop topology" (line 3). The office is unclear as to whether this claim limitation is the same as the "modeling the local loop" (claim 12, line 7). The office suspects that applicant intended to cancel this claim, as the limitation was added to independent claim 12.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7, 12-17, 22, 26, 27, 33, 37-39, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amrany et al (US Patent 6,192,109) in view of Cook (5,623,543).

With respect to claims 1 and 22, Amrany et al discloses a method and apparatus for improved DSL communication. To determine the maximum permissible transmit

signal power, Amrany et al sends a single- or multi- tone test signal or any other signal compatible with xDSL (determining the physical loop faults) (column 3, lines 20-25). In response to a detected line condition, the xDSL communication is transmitted at the highest data rate supported by the transmission line (qualifying the local loop / calculating the data rates of the local loop) (column 3, lines 46-48). Amrany et al further discloses the monitoring of the signal-to-noise ratio (quantifying the local loop by calculating the signal-to-noise ratio) (column 8, lines 63-65).

Although well known in the art, Amrany et al does not expressly disclose the modeling of the local loop. Cook discloses an expression for determining the characteristic impedance of a transmission line such as POTS (column 1, lines 40-47).

A person of ordinary skill in the art would have been motivated to employ Cook in Amrany et al to determine the impedance of transmission line. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Amrany et al with Cook (collectively Amrany-Cook) so as to obtain the invention as specified in claims 1 and 22.

With respect to claims 2 and 3, the Amrany et al patent is for use with xDSL technologies that include symmetric- and asymmetric- DSL.

With respect to claims 5, 15, 26 and 37, discloses that the characteristic impedance of the transmission line is a function of resistance, inductance, shunt conductance and capacitance per unit length (RLGC) of the line (column 1, lines 40-47).

With respect to claims 6, 16, 27 and 38 discloses that the characteristic impedance of the transmission line is also a function of angular frequency (frequency) (column 1, lines 40-47).

With regard to claim 7, 17, 28 and 39, Amrany et al sends a single- or multi- tone test signal or any other signal compatible with xDSL (column 3, lines 20-25). The sending device reads on applicant's test head. In response to a detected line condition (plant data and test results), the xDSL communication is transmitted at the highest data rate supported by the transmission line (column 3, lines 46-48).

With respect to claims 12, 14 and 33, Amrany et al discloses a method and apparatus for improved DSL communication. To determine the maximum permissible transmit signal power, Amrany et al sends a single- or multi- tone test signal or any other signal compatible with xDSL (determining the physical loop faults) (column 3, lines 20-25). In response to a detected line condition, the xDSL communication is transmitted at the highest data rate supported by the transmission line (qualifying the local loop/calculating the data rates of the local loop) (column 3, lines 46-48). Amrany et al further discloses the monitoring of signal spectral characteristics of the test signal (quantifying the local loop by calculating the PSD) (column 8, lines 40-44).

Although well known in the art, Amrany et al does not expressly disclose the modeling of the local loop. Cook discloses an expression for determining the characteristic impedance of a transmission line such as POTS (column 1, lines 40-47).

A person of ordinary skill in the art would have been motivated to employ Cook in Amrany et al to determine the impedance of transmission line. At the time the invention

was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Amrany et al with Cook (collectively Amrany-Cook) so as to obtain the invention as specified in claims 12, 14 and 33.

With respect to claim 13, the Amrany et al patent is for use with xDSL technologies that includes asymmetric- DSL.

With respect to claim 44, Amrany et al discloses a method and apparatus for improved DSL communication. To determine the maximum permissible transmit signal power, Amrany et al sends a single- or multi- tone test signal or any other signal compatible with xDSL (determining the physical loop faults) (column 3, lines 20-25). The sending device reads on applicant's test head. In response to a detected line condition (plant data and test results), the xDSL communication is transmitted at the highest data rate supported by the transmission line (qualifying the local loop / calculating the data rates of the local loop) (column 3, lines 46-48). Amrany et al further discloses the monitoring of the signal-to-noise ratio (quantifying the local loop by calculating the signal-to-noise ratio) (column 8, lines 63-65).

Although well known in the art, Amrany et al does not expressly disclose the modeling of the local loop. Cook discloses an expression for determining the characteristic impedance of a transmission line such as POTS (column 1, lines 40-47).

A person of ordinary skill in the art would have been motivated to employ Cook in Amrany et al to determine the impedance of transmission line. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to

which the invention pertains to combine Amrany et al with Cook (collectively Amrany-Cook) so as to obtain the invention as specified in claim 44.

5. Claims 11, 21, 32, 43 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amrany-Cook in view of Nimmagadda US Patent (6,426,961).

With respect to claims 11, 21, 32, 43 and 47, Amrany et al discloses a method and apparatus for improved DSL communication. To determine the maximum permissible transmit signal power, Amrany et al sends a single- or multi- tone test signal or any other signal compatible with xDSL (determining the physical loop faults) (column 3, lines 20-25). In response to a detected line condition, the xDSL communication is transmitted at the highest data rate supported by the transmission line (qualifying the local loop / calculating the data rates of the local loop) (column 3, lines 46-48). Amrany et al further discloses the monitoring of the signal-to-noise ratio (quantifying the local loop by calculating the signal-to-noise ratio) (column 8, lines 63-65). Amrany et al further discloses the monitoring of signal spectral characteristics (PSD) of the test signal (column 8, lines 40-44).

Although well known in the art, Amrany et al does not expressly disclose the modeling of the local loop. Cook discloses an expression for determining the characteristic impedance of a transmission line such as POTS (column 1, lines 40-47).

A person of ordinary skill in the art would have been motivated to employ Cook in Amrany et al to determine the impedance of transmission line. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to

which the invention pertains to combine Amrany et al with Cook (collectively Amrany-Cook).

Amrany-Cook, however, does not disclose the selection of a DSL technology from a configurable list. Nimmagadda discloses a method for the selection of a communication technology. As shown in Fig 3, after the performance information is determined, a subscriber may evaluate the information and select the most appropriate mode of operation. The appropriate mode is selected from a list (configurable list) (column 3, lines 9-25).

A person of ordinary skill in the art would have been motivated to employ Nimmagadda with Amrany-Cook so as to select a appropriate DSL technology so as to limit bandwidth. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to employ a list from which the most appropriate DSL technology may be chosen so as to obtain the invention as specified in claims 11, 21, 32, 43 and 47.

#### ***Allowable Subject Matter***

6. Claims 45-46 are allowed. Claims 8-10, 18-20, 23-24, 29-31, 34-35, 40-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.




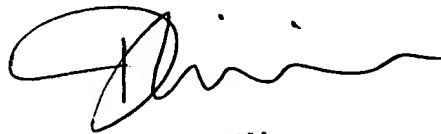
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew W Wahba whose telephone number is (571) 272-3081. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully Submitted,

Andrew Wahba   
Patent Examiner  
November 12, 2004



**PHIRIN SAM  
PRIMARY EXAMINER**